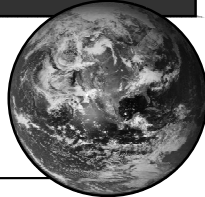


Proposed Regulation for the Mandatory Reporting of Greenhouse Gas Emissions

Pursuant to the California Global Warming
Solutions Act of 2006 (AB 32)

December 6, 2007
El Monte, California



Overview

- Introduction
- Mandatory Reporting Regulation
- Verification
- Economic Analysis
- Proposed Modifications



2

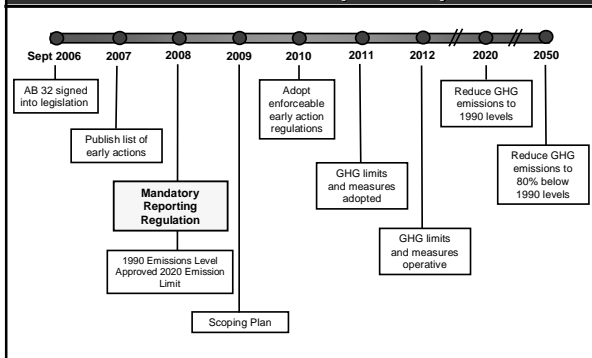
Statutory Requirements for Mandatory Reporting

- Begin with largest sources
- Account for all electricity consumed, including imports
- Ensure rigorous and consistent accounting
- Include a verification component
- Use California Climate Action Registry (CCAR) protocols as appropriate



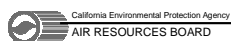
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California Global Warming Solutions Act of 2006 (AB 32)



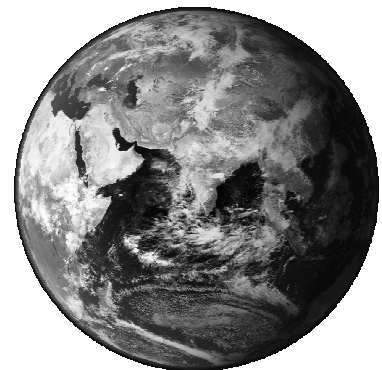
Goals of Reporting Program

- Completeness
- Consistency
- Transparency
- Accuracy
- Support overall program needs



5

Proposed GHG Reporting Regulation



Who Reports?

- Electric generating facilities, retail providers, and marketers
- Cogeneration facilities
- Oil refineries, hydrogen plants
- Cement plants
- Large combustion sources
 - $\geq 25,000$ MT CO₂/yr

94% of point source CO₂ emissions



Key Requirements

- Annual facility-based reporting
- Report based on operational control
- Kyoto gases
- Comprehensive power sector requirements
- Third party verification



8

Key Requirements (continued)

- Report combustion, process, and fugitive emissions
- Scope of reporting
 - Fuel use
 - Indirect energy use
 - Emissions measurements
 - Fuel testing as required
- Provides *de minimis* reporting level



9

Reporting Schedule

- Begin in 2009 on 2008 emissions
- Transitional year for 2008
- Full compliance with methods in regulation for 2010 and later reports
- Verification required beginning 2010



10

Electric Generating Facilities, Retail Providers, and Marketers



11

Who Would Report?

- Operators of electric generating facilities ≥ 1 MW that emit $\geq 2,500$ MT of CO₂ per year
- Retail Providers
 - Investor and publicly owned utilities, other specified operators serving end users
- Marketers
 - Other purchasers or sellers of imported and exported power



12

What Will be Reported?

- Operators of electric generating facilities
 - Direct emissions
- Retail Providers
 - Direct emissions
 - Purchases and sales
- Marketers
 - Purchases and sales

Use of CPUC/CEC Recommendations

- Staff proposal reflects CPUC/CEC joint recommendations
- Reporting allows for all potential regulatory approaches
- ARB would calculate emissions from reported purchases and sales
- CPUC/CEC recommend revisiting emission factors annually

Cogeneration Facilities

- Based on CCAR Protocol
- CO₂ emissions calculated for both electricity and thermal energy generation
- Reporting threshold similar to power
- Staff proposing modifications for smallest plants



Petroleum Refineries and Hydrogen Plants



Petroleum Refineries: Basis for Proposal

- American Petroleum Institute (API) Compendium
- CCAR Refinery Protocol Discussion Paper
- CA Air District rules and methods
- US EPA, IPCC/EU Guidance for storage tanks and wastewater

What Will Refineries Report?

- Combustion Emissions
 - Daily and monthly fuel testing to develop refinery-specific emission factors
- Process related GHG emissions
- Fugitive and flaring emissions

Petroleum Refining Issues

- Frequency of sampling
 - Proposed daily sampling consistent with EU and IPCC
- Impacts on small refineries
 - Staff proposing modifications
- Reporting procedures during breakdowns

Hydrogen Production

- Staff modified existing API method to:
 - Reflect variations in plant operations
 - Avoid double counting GHG emissions

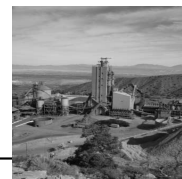


Cement Plants

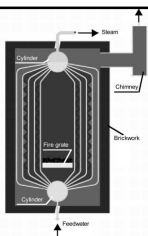


Cement Plant Reporting

- In-state emissions reported
 - CO₂, N₂O, and CH₄ from combustion
 - CO₂ from manufacturing process
 - Fugitive CH₄ from coal storage
 - Efficiency metrics
- Imports and leakage are an issue



General Stationary Combustion Facilities (GSCs)



General Stationary Combustion

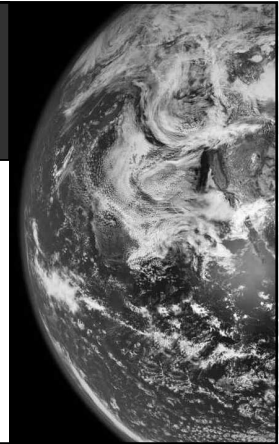
- Large combustion facilities emitting ≥25,000 MT CO₂
- Emission calculations typically based on fuel consumption
- Process and fugitive emissions slated for future evaluation



Example Facilities Greater than 25,000 MT CO₂e

- Natural gas transmission
- Industrial gases
- Paperboard manufacture
- Colleges and universities
- Oil production
- Food processing
- Steel foundries
- Mineral processes
- Glass container
- Malt beverages

Verification



Third Party Verification

- AB 32 requires verification
- Proposal built on international standards
- Consistent CCAR and EU approaches
- Both private sector and California air districts can be verifiers

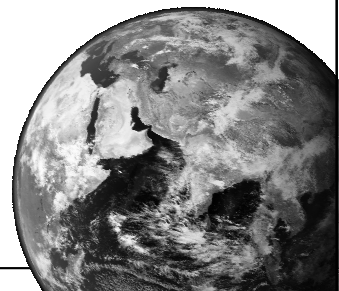
ARB Process

- Verification training to be offered in 2008
- ARB to accredit verifiers
- ARB to conduct targeted audits of verifiers and reported emissions

Nature of Verification

- Site visits
- Sampling plan
- Data checks on largest and most uncertain sources
- Overall differences exceeding 5 percent considered significant
- Verification opinion issued

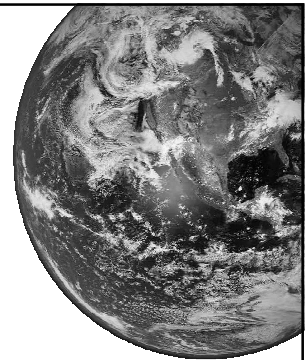
Economic Analysis



Overall Economic Impacts

- About 800 sources affected
- Costs for reporting and verification \$21-\$30 million/yr statewide
- Costs likely to decrease over time
- No loss of business expected
- Small increase in jobs

Proposed Modifications



Proposed Modifications

- De minimis cap of 20,000 MT CO₂e
- Reporting procedures during instrumentation breakdowns
- Power sector clarifications
- Small refinery fuel testing
- Small cogeneration reporting
- Other minor modifications

Staff Recommendation

- Staff recommends approval of the proposed regulation and modifications

